4. ELVIS TUNING OPTIONS

The system administrator can configure the following items to tune ELVIS performance:

The number of ELVIS Chart server processes

The frequency of Garbage Collection

The capability to allow or disable ELVIS processes from running in the background without a GCCS/JMCIS user logged into the server (also known as SCI vs. GENSER configuration)

CERN httpd Server Configuration.

ELVIS Chart Server Process Control

Client browsers connecting to the ELVIS server request tactical map data whenever a virtual command center wall chart is accessed or a map redraw is selected (e.g., zoom, center, or plot control change). By default, four server processes (called Chartgrab) run in the background as the primary agents servicing browser requests. If four clients request tactical data at the same time, then all four Chartgrab processes are active. If a fifth client request is received, then the request is queued, pending completion of one of the previous four requests.

Based on the activity on the server, the default setting of four Chartgrab server processes can be changed, but increasing the number should be incremental since many factors (e.g., RAM) impact overall system performance. For optimal performance, the system administrator should establish multiple ELVIS servers and distribute the customer base by assigning different URLs.

In order to change the number of server Chartgrab processes, an environmental variable in the file */h/LVIS/Scripts/.cshrc.LVIS* should be changed; currently, this file has a line that reads:

setenv LVIS_NUMCHARTS 4

Values less than 1 or more than 8 are not allowed and are replaced at runtime with 1 or 8, respectively. For the new value to take effect, restart ELVIS by exiting GCCS/JMCIS (in a GENSER environment) or by rebooting (in an SCI environment).

Garbage Collection Frequency

ELVIS processes create HTML files on the ELVIS server in the directory */h/LVIS/data/pub/users*. These files are submitted to the browser by the httpd daemon. The effective life span of these files is relatively short and depends on the contents of the browser's RAM cache. These files can be periodically deleted without an adverse impact on the operations of ELVIS and, most importantly, will free storage space on the hard disk. During installation, a cron job is added to the root crontab file that executes the garbage collection script *LVIS_SA_GarbageColl* every 24 hours. This script

deletes all files under */h/LVIS/data/pub/users* that are older than a specified time threshold. These files cannot be deleted immediately after creation to ensure proper synchronization of data transfers between the HTTP server and the client browsers. By default, *LVIS_SA_GarbageColl* deletes all files less than one day old. If a longer persistence is desired, then the threshold may be modified by changing the "-mtime" parameter in the script's *find* command.

During the installation of ELVIS, the following line is added to the */usr/spool/cron/crontabs/root* file to launch the garbage collection script every day at 0500:

0 5 * * * /h/LVIS/progs/LVIS_SA_GarbageColl

As always, the system administrator should monitor disk use. If required, an alternative method could be devised to delete files under */h/LVIS/data/pub/users*. However, do not delete files under */h/LVIS/data/pub/users/login_name/CUSTOM_MAPS*, where *login_name* is the name of a user. Also, do not delete files under */h/LVIS/data/pub/users/sysadmin*.

Running ELVIS in the Background

GCCS/JMCIS allows background processes to continue running or to terminate when the user logs out, depending on a configuration setting (SCI or GENSER, respectively). ELVIS respects this configuration and ELVIS processes remain running or terminate, depending on the GCCS/JMCIS configuration.

During the GCCS/JMCIS operating system installation, the installer is asked to specify a GENSER or SCI configuration. However, some segments may deviate from this procedure and change the GENSER/SCI setting, thereby affecting ELVIS. During the ELVIS installation, a file is created in the directory */h/LVIS/data/local* which governs the "remain resident or terminate" behavior of ELVIS processes during system exit. If the file *ELVIS_Shuts_Down* exists, then ELVIS processes will terminate whenever the user logs out. If the file *ELVIS_Stays_Up* exists, then ELVIS processes will remain running whenever the user logs out. (Note that a GCCS/JMCIS user must log in following a complete system reboot to initially start all GCCS/JMCIS and ELVIS processes.)

The "remain resident or terminate" behavior of ELVIS can be changed by renaming *ELVIS_Shuts_Down* to *ELVIS_Stays_Up* (or vice versa). Be sure spelling and upper/lower case are exact, and do not allow both files to exist simultaneously (exit ELVIS before making the change).

HTTP Server Configuration

The CERN httpd server is supplied with the ELVIS segment and may be configured by editing the file */h/LVIS/data/http.conf*. It is recommended that the supplied configuration be retained unless there is a compelling reason to make modifications. Currently, the configuration has the following attributes:

The next available port beginning with 9000 is used as the server's port.

The root directory for the httpd server is */h/LVIS/progs*, and the public data directory is */h/LVIS/data/pub*.

Access and error logs are disabled (they may be enabled by uncommenting the lines beginning

with *#AccessLog*, *#ErrorLog*, *#LogFormat*, and *#LogTime*, if desired, and then restarting ELVIS).

Additional HTTP servers may run on the workstation. Their configuration will be controlled by a file other than */h/LVIS/data/http.conf*.

5. CONFIGURING NETSCAPE

ELVIS performance can be improved by ensuring certain configuration parameters are set correctly. Under the Netscape **Options** pull-down menu, select **Preferences** option and then select the **Cache and Network** option. Configure the memory cache for 3000 KB and the disk cache for 0 KB (these are recommended values). Also under **Preferences** option, select **Images and Security**, and, under **Colors**, select **Use Closest Color in Color Cube** instead of **dither** (this will improve graphics performance).

If screen space is limited, the Netscape **Options** pull-down menu allows the user to hide the location and directory buttons. Note that VGA monitors configured for 16 colors will not provide a good color rendering.

For more information on using Netscape Navigator, refer to the Navigator documentation. As a reference, the standard Web/HTML error codes are listed below:

Bad Request 400. Your browser made an incorrect request to fetch the document or the server cannot understand your request. If this problem persists, contact your system administrator.

Unauthorized 401. The server is expecting an encryption ID from the browser or the password is wrong.

Forbidden 403. The document you are requesting is forbidden, meaning you do not have read privileges or that you are not allowed to have the page requested.

Not Found 404. The document requested no longer exists in its original location (i.e., the document has been moved or deleted).

Internal Error 500. The server could not send the HTML document due to an internal (server software) error caused by an improperly configured server (contact the system administrator).

Not Implemented 501. A Web server replies with this error message if it does not support the feature requested.

Service Temporarily Overloaded 502. The server cannot process the request due to high load.

Gateway Time-out 503. A connection time-out has occurred, either due to server, network, or client problems.

6. TROUBLE SHOOTING

The following problems have been observed:

Sysadmin forgets the password

Unit UICs are not found (UICs are needed to display the SOF (Status of Forces) button bar when a unit is selected)

Users cannot log in to ELVIS.

GCCS system chart fails to launch after ELVIS re-install.

Sysadmin Password

A utility is provided to reset the system administration password back to the default "vinson". The executable is */h/LVIS/progs/LVIS_SA_ResetPasswd*. No parameters are required. This file has root protection.

Unit UICs Not Found

When a unit is selected, a lookup table (called units.txt located in */h/LVIS/data*) is used to associate the unit name, type, and hull with a UIC. The UIC provides the link to the SOF data. If the UIC is found in units.txt, then a SOF button bar is provided to allow access to SORTS, CASREP, MOVREP, and EMPSKD data.

The system administrator can edit units.txt (using any text editor) to add or modify entries. The alphabetical ordering and format of the file must be preserved (since a binary search is used on unit name, with a secondary check on type-hull). A future release of ELVIS will provide a browser-based tool to update this file.

User Login Problems

Assuming that the user has an ELVIS account (remember that an ELVIS account is independent of a UNIX account) and has correctly entered the login and password, then verify that GCCS/JMCIS is running and the process GDbm is running.

GCCS System Chart Fails to Launch

Following a re-installation of ELVIS, the GCCS system chart may fail to launch. Rebooting the system will correct this problem. This problem does not occur for a first-time installation of ELVIS.